inner side, or that towards the axis; and all the divisions of the branches obey the same law in regarding the part from which they have divided as an axis towards which the currents descend.

C. VARLEY.

CIRCULATION IN OIL OF TURPENTINE, SPIRIT OF WINE, &c.

IN April last Mr. C. Varley presented to the Society a short paper, illustrated by drawings, of the circulation which he had observed in drops of the above liquids.

The manner in which he made the observations was to place a small drop of the liquid on the glass tablet of his animalcula-cage, and then to screw down on it the disc of mica, or thin glass, till it touches the drop, and compresses it to the thickness of about one-fifteenth of an inch, its diameter being about a quarter of an inch. A lens from one-tenth to one quarter of an inch focus, will shew the circulation. As the particles of the above liquids are transparent in their pure state, and consequently not to be distinguished one from another, the circulation can only be shewn, or rather inferred, from the apparent motion of minute foreign particles floating in the liquid, and of nearly the same specific gravity with it. If the liquid to be examined is quite clear, it may be fitted for observation by grinding with it a few particles of common coal, so as to render it slightly turbid.

1. A drop of spirit of wine, or of naphtha, placed as above mentioned, exhibits two, three, or four, vortices or

centres of circulation, according to the size of the drop; and if these vortices are viewed laterally, the lines of particles will be seen forming oblique curves from top to bottom of the drop.

2. Oil of turpentine shews a rapid circulation in two continuous spirals, one to the right, the other to the left, around the drop. These meet in the opposite diameter, from which the particles are slowly carried across the diameter to the place of starting; and this continues while there is fluid enough to let it be seen.

3. If, however, the drop does not exceed one-tenth of an inch in diameter, it presents the appearance of particles continually rising up in the middle, and radiating in gentle curves to the circumference.

4. If the liquid be put into a very small vial, similar motions are perceived; the particles, when they have reached the side of the vial, going down, to rise up afterwards in the centre or axis.

5. If a bubble of air be enclosed in the liquid, motions, similar to those described in No. 2, are observed in the part immediately in contact with the bubble.

6. In a flat drop of new wine, laid on the tablet, but not compressed by the mica, the motion was a regular uniform circulation; the particles rising from below at one end of the drop, then passing straight across on the surface, and descending at the other end.